

## **Local Hazard Mitigation Annex County of San Mateo, California**

### **Introduction**

The County of San Mateo is a moderately sized County in California. The County has a population of 707,161 people according to the 2000 Census. Last year the County had a budget of \$1.3 Billion and currently, the County employs 5,234 people. While the County provides sheriff services, the fire services are provided through a contract with the California Department of Forestry (CDF) for all unincorporated areas not within boundaries of an independent fire district.

### **The Planning Process**

This process of preparing this plan was familiar to the County of San Mateo. The County has a Natural Hazards Element in its General Plan last updated in 1986 that includes the discussion of Safety and Seismic Safety. Additionally, the County routinely enforces the requirements of the California Environmental Quality Act (CEQA) requirements (which, since 1988, have required mitigation for identified natural hazards) for areas in the unincorporated County. The County's effort has focused on building these pre-existing programs and identifying gaps that may lead to disaster vulnerabilities in order to work on ways to address these risks through mitigation.

Many of the activities conducted by the County were fed into the planning process for the multi-jurisdictional plan. The County participated in various ABAG workshops and meetings, including the general "kick-off" meeting and the soft-story charrette. In addition, the County has provided written and oral comments on the multi-jurisdictional plan. Finally, the County provided information on facilities that are viewed as "critical" to ABAG.

Key County staff met on two occasions to identify and prioritize mitigation strategies appropriate for the County. Staff involved in this meeting included the Office of Emergency Services, Planning, Building, County Fire, and Public Works. At the first meeting, the general priorities and appropriate County departments were identified. The County provided the opportunity for the public to comment on the DRAFT mitigation strategies selected by County staff at the Planning Commission meeting on April 11, 2005. The resolution adopting the plan and strategies will be on the Board of Supervisors agenda after this annex receives FEMA approval. The mitigation strategies will become an implementation appendix to the Natural Hazards Element. Additionally, hazard maps for the County have been posted on the County's website for public review.

### **Hazard and Risk Assessment**

The ABAG multi-jurisdictional Local Hazard Mitigation Plan, to which this is an Annex, lists nine hazards that impact the Bay Area, five related to earthquakes (faulting,

shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four related to weather (flooding, landslides, wildfires, and drought).

While the County has undertaken a number of general hazard mapping activities since the first Natural Hazards Element was prepared by the County, all of these maps are less detailed and are not as current as those shown on the ABAG website at <http://quake.abag.ca.gov/mitigation/>.

The County has had recent landslides in the La Honda area. Additionally, the Devils Slide area of Highway 1 has had ongoing landslide issues for the past 20 years.

Information on disasters declared in San Mateo County is at <http://quake.abag.ca.gov/mitigation/disaster-history.html>.

The County examined the hazard exposure of the County urban land based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the 103,990 urban acres in the County (including **both areas part of incorporated cities and unincorporated areas**):

- Earthquake faulting - 4,506 acres are susceptible to earthquake faulting.
- Earthquake shaking - 37,455 acres are in the highest category of shaking potential, in large part because both the San Andreas and San Gregorio faults run through the County.
- Earthquake-induced landslides - maps are not yet prepared for San Mateo County.
- Earthquake liquefaction - 33,660 acres are in areas of moderate, high, or very high liquefaction susceptibility.
- Tsunamis – while tsunamis may be a hazard in the County of San Mateo, only mapping of the inundation area on the Pacific Ocean side of the County has been completed at this time.
- Flooding - 4,816 acres are in the 100-year flood plain.
- Landslides - 8,579 acres are subject to mostly landslide area.
- Wildfires - 16,478 acres are susceptible to very high or high wildfire threat, while 54,618 acres are in the wild land urban interface threat area.
- Dam failure inundation – 9,486 acres are in an area of dam failure inundation.
- Drought – all 103,990 urban acres are subject to drought.

Of the 31,277 urban acres in the unincorporated County only:

- Earthquake faulting - 1,380 acres are susceptible to earthquake faulting.
- Earthquake shaking - 6,643 acres are in the highest category of shaking potential, in large part because the San Andreas Fault runs through the County.
- Earthquake-induced landslides - maps are not yet prepared for San Mateo County.
- Earthquake liquefaction - 6,089 acres are in areas of moderate, high, or very high liquefaction susceptibility.

- Tsunamis – while tsunamis may be a hazard in the County of San Mateo, only mapping of the inundation area on the Pacific Ocean side of the County has been completed at this time.
- Flooding - 1,084 acres are in the 100-year flood plain, while another 238 acres are in the flood-prone area.
- Landslides - 5,932 acres are subject to mostly landslide area.
- Wildfires - 13,078 acres are susceptible to very high or high wildfire threat, while 10,838 acres are in the wild land urban interface threat area.
- Dam failure inundation - 811 acres are in an area of dam failure inundation.
- Drought – all 31,277 urban acres are subject to drought.

The County also examined the hazard exposure of infrastructure based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the major infrastructure in the entire County (including ***both unincorporated and incorporated areas***):

- Earthquake faulting - 127 miles of roads and 118 miles of pipelines are subject to earthquake faulting.
- Earthquake shaking – 1,106 miles of roads, 17 miles of transit, 19 miles of rail, and 956 miles of pipelines are in the highest category of shaking potential.
- Earthquake-induced landslides – maps are not yet prepared for San Mateo County.
- Earthquake liquefaction – 1,030 miles of roads, 7 miles of transit, 27 miles of rail, and 929 miles of pipelines are in an area of moderate, high, or very high liquefaction susceptibility.
- Tsunamis – while tsunamis may be a hazard in the County of San Mateo, only mapping of the inundation area on the Pacific Ocean side of the County has been completed at this time.
- Flooding - 152 miles of roads, 137 miles of pipelines, 1 mile of transit, and 7 miles of rail are in the 100-year flood plain.
- Landslides - 296 miles of roads, 290 miles of pipelines, and 1 mile of rail are in an area of existing landslides.
- Wildfires - 175 miles of roads and 168 miles of pipelines are susceptible to very high wildfire threat, while 437 miles of roads, 419 miles of pipelines, and 1 mile of rail are susceptible to high wildfire threat. Additionally, 1510 miles of roads, 9 miles of transit, 15 miles of rail, and 1,393 miles of pipelines are in the wild land urban interface threat area.
- Dam failure inundation - 319 miles of roads, 4 miles of rail, and 283 miles of pipelines are within the dam failure inundation area.
- Drought - is not a hazard for roads.

Of the major infrastructure in the ***unincorporated*** County:

- Earthquake faulting - 59 miles of roads and 55 miles of pipelines are subject to earthquake faulting.

- Earthquake shaking - 187 miles of roads, 3 miles of transit, 1 mile of rail, and 149 miles of pipelines are in the highest category of shaking potential.
- Earthquake-induced landslides – maps are not yet prepared for San Mateo County.
- Earthquake liquefaction - 174 miles of road, 1 mile of transit, 3 miles of rail, and 155 miles of pipelines are in an area of moderate, high, or very high liquefaction susceptibility.
- Tsunamis – while tsunamis may be a hazard in the County of San Mateo, only mapping of the inundation area on the Pacific Ocean side of the County has been completed at this time.
- Flooding - 38 miles of roads and 35 miles of pipelines are in the 100-year flood plain.
- Landslides - 231 miles of roads and 230 miles of pipelines are in an area of existing landslides.
- Wildfires - 156 miles of roads and 151 miles of pipelines are susceptible to very high wildfire threat, while 378 miles of roads and 365 miles of pipelines are susceptible to high wildfire threat. Additionally, 314 miles of roads, 2 miles of transit, 1 mile of rail, and 285 miles of pipelines are in the wild land urban interface threat area.
- Dam failure inundation - 16 miles of roads and 16 miles of pipelines are within the dam failure inundation area.
- Drought - is not a hazard for roads.

Finally, the County examined the hazard exposure of critical health care facilities, schools, and city-owned buildings based on the information on ABAG's website <http://quake.abag.ca.gov/mitigation/pickcrit.html>. Of the critical facilities in the **entire** County:

- Earthquake faulting – there are 2 health care facilities, 4 schools, 10 critical facilities, and 14 bridges and interchanges that are within the California Geological Survey earthquake fault study zone.
- Earthquake shaking - 85 schools, 268 critical facilities, 29 health care facilities, and 185 bridges and interchanges are in the highest shaking potential area.
- Earthquake-induced landslides – maps not yet prepared for San Mateo County.
- Earthquake liquefaction - there are 15 health care facilities, 41 schools, 282 critical facilities, and 136 bridges and interchanges in the areas of high or very high liquefaction susceptibility.
- Tsunamis – while tsunamis may be a hazard in the County of San Mateo, only mapping of the inundation area on the Pacific Ocean side of the County has been completed at this time.
- Flooding – 4 health care facilities, 11 schools, 44 critical facilities, and 35 bridges and interchanges are in the 100-year flood plain.
- Landslides - 2 schools, 11 critical facilities, and 19 bridges and interchanges are in mostly landslide area.
- Wildfires - 4 critical facilities and 11 bridges and interchanges are in the very high wild fire threat area, while 2 schools, 23 critical facilities, and 28 bridges

and interchanges are in the high wild fire threat area. Additionally there are 27 health care facilities, 134 schools, 308 critical facilities, and 149 bridges and interchanges in the wild land urban interface threat area.

- Dam failure inundation - 15 health care facilities, 27 schools, 109 critical facilities, and 76 bridges and interchanges are subject to dam failure inundation.
- Drought – will not affect any County facilities or buildings.

Of the critical facilities in the ***unincorporated*** County:

- Earthquake faulting – there are 4 bridges and interchanges that are within the California Geological Survey earthquake fault study zone.
- Earthquake shaking - 6 schools, 3 critical facilities, and 39 bridges and interchanges are in the highest shaking potential area.
- Earthquake-induced landslides – maps not yet prepared for San Mateo County.
- Earthquake liquefaction - there are no health care facilities, schools, or critical facilities in the areas of moderate, high or very high liquefaction susceptibility. while 27 bridges and interchanges are in an area of very high liquefaction susceptibility, 12 bridges and interchanges are in an area of high liquefaction susceptibility, and 11 bridges and interchanges are in an area of moderate liquefaction susceptibility.
- Tsunamis – while tsunamis may be a hazard in the County of San Mateo, only mapping of the inundation area on the Pacific Ocean side of the County has been completed at this time.
- Flooding - 1 critical facility, 15 bridges and interchanges are in the 100-year flood plain.
- Landslides - 1 school, 3 critical facilities, 14 bridges and interchanges are in mostly landslide area.
- Wildfires - there are no health care facilities, schools, critical facilities, bridges, or interchanges in the wild fire threat area, while 1 health care facility, 15 schools, 5 critical facilities, and 27 bridges and interchanges are in the wild land urban interface threat area.
- Dam failure inundation - no health care facilities, schools, nor critical facilities are subject to dam failure inundation, but 6 bridges and interchanges are subject to dam failure inundation.
- Drought – will not affect any County facilities or buildings.

There were 56 repetitive losses associated with 23 properties located in the County based on the information at <http://quake.abag.ca.gov/mitigation/pickflood.html>. Most of these were within cities. Only three claims were within unincorporated areas of the County – all associated with a single property.

The County plans to work with ABAG during 2005 to improve the risk assessment information being compiled by ABAG by providing information on unreinforced masonry buildings and soft-story apartments located in the County.

Drought, though a potential problem in the County, is not fully assessed. The County will work with ABAG and various water supply agencies on this issue.

The County plans to work with ABAG to develop specific information about the kind and level of damage to buildings, infrastructure, and critical facilities which might result from any of the hazards previously noted. The ABAG Annex states that ABAG will be doing this work in 2005 through early 2006.

The County is working on tsunamis evacuation planning for the coast and is currently updating the Tsunamis Response Plan for San Mateo County. Arrangements are being made for alert notification systems for people in potential inundation areas. The County is also conducting drills and exercises for communities in tsunamis areas. Additionally, the County is working on identifying evacuation routes and signage for those routes.

As these impacts are not fully developed, the County has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquakes (liquefaction, shaking, and faulting), flooding, wildfire, and landslides (including unstable earth) pose a significant risk for potential loss.

### **Mitigation Activities and Priorities**

As a participant in the ABAG multi-jurisdictional planning process, the County of San Mateo staff helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan. The list was discussed at a meeting of the Office of Emergency Services, Planning, Building, County Fire, and Public Works. At the meeting, all of the mitigation strategies were reviewed. The tentative decision on priority was made based on a variety of criteria, not simply on an economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our heritage.

Over time, we are committed to developing better hazard and risk information to use in making those trade-offs. We are not trying to create a disaster-proof region, but a disaster-resistant one. In addition, several of the strategies are existing County programs.

These draft priorities will be submitted to the County Manager for review. The draft priorities will also be provided to the County Board of Supervisors. The public was provided with an opportunity to comment on the DRAFT priorities. The final strategies (as shown in the attached Table) will become an *Implementation Appendix* to the County's *Natural Hazard Element*.

In addition, the County examined the hazard exposure information to County-owned critical facilities supplied by ABAG. The County has determined that the combination of construction type, age, and shaking exposure to seven building within the County are

significant. The County has completed a Seismic Hazards Mitigation Program that was adopted by the Board of Supervisors in February 1990. This program identified seven buildings in the unincorporated County that are potentially hazardous and outlined a mitigation strategy to reduce the seismic hazards in these buildings. Since that time, five of the seven buildings have either been demolished or retrofitted.

### **The Plan Maintenance and Update Process**

The County Manager's Office will ensure that **monitoring** of this Annex will occur. The plan will be monitored on an on-going basis. However, the major disasters affecting our community, legal changes, notices from ABAG as the lead agency in this process, and other triggers will be used. Finally, the Annex will be a discussion item on the agenda of the meeting of County department heads at least once a year in April. At that meeting, the department heads will focus on **evaluating** the Annex in light of technological and political changes during the past year or other significant events. This group will be responsible for determining if the plan should be updated.

The County of San Mateo is committed to reviewing and updating this plan annex at least once every five years, as required by the Disaster Mitigation Act of 2000. County Planning will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, the County again plans to participate in the multi-jurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other agencies will be contacted, including the County's Office of Emergency Services. Counties should then work together to identify another regional forum for developing a multi-jurisdictional plan.

The **public** will continue to be involved whenever the plan is updated, and as appropriate during the monitoring and evaluation process. Prior to adoption of updates, the County will provide the opportunity for the public to comment on the updates. A public notice will be posted prior to the meeting to announce the comment period and meeting logistics.

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